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Abstract of the Disclosure

A system for protocol processing in a computer network has a TCP/IP Offload
5 Network Interface Device (TONID) associated with a host computer. The TONID
provides a fast-path that avoids protocol processing for most large multi-packet
messages, greatly accelerating data communication. The TONID also assists the host for
those message packets that are chosen for processing by host software layers. A
communication control block for a message is defined that allows DMA controllers of the
10 TONID to move data, free of headers, directly to or from a destination or source in the
host. The context is stored in the TONID as a communication control block (CCB) that
can be passed back to the host for message processing by the host. The TONID contains
specialized hardware circuits that are much faster at their specific tasks than a general
purpose CPU. A preferred embodiment includes a trio of pipelined processors with
15 separate processors devoted to transmit, receive and management processing, with full
duplex communication for four fast Ethernet nodes.